

CLAIMS

5 1. Process for production of a bottle stopper, particularly for wine bottles, from polymers, characterized in that it comprises the following series of steps:

 a) homogenizing and/or mixing a single polymeric material at least of VAE (vinyl acetate ester) base, by bringing it to
10 temperature, in an extruder comprising a single casing and one screw as well as an outlet nozzle,

 b) injecting at least one gas under pressure into this single material,

 c) shaping the material through the nozzle of said extruder
15 in the form of an extrusion of predetermined diameter, and

 d) cutting of said extrusion to form stoppers of this same diameter.

2. Process for production according to claim 1,
20 characterized in that there is introduced at least one coloring material into the material at the outset and in that the injection of gas is carried out upstream of the nozzle.

3. Process for production according to claim 1 or 2,
25 characterized in that there is injected a gas to obtain a final density of the product comprised between 0.2 and 0.6 g/cm³.

4. Process for production according to any one of the preceding claims, characterized in that there is associated with
30 the VAE of the single material other polymers selected from high and low density polyethylenes.

5. Process for production according to claim 4, characterized in that there is introduced the different compounds to reproduce the single material:

- 50 to 100% of VAE (vinyl acetate ester)
- 0 to 30% of HDPE (High density polyethyelene),
- 0 to 20% of LDPE (Low density polyethylene).

6. Process for production according to any one of the preceding claims, characterized in that there are carried out finishing operations on the cutoff stopper.

7. Device for practicing the process according to any of the preceding claims, characterized in that it comprises an extruder (10) with a hopper (12) adapted to receive a polymer or a mixture of polymers forming a single material, one screw (14), an extrusion head (16), one or several inlets (18) permitting injecting a gas or a mixture of gases at a pressure comprised between 1 and 500 bars.

8. Device for practicing the process according to claim 7, characterized in that it comprises one or several other inlets (20) through which are injected one or several coloring materials.

9. Device for practicing the process according to claim 7 or 8, characterized in that it comprises a cooling tunnel (22) juxtaposed to the extruder, at the outlet of the extrusion head (16).

10. Device for practicing the process according to claim 1, characterized in that it comprises a station for spraying water to obtain a skin on the surface of the stopper.

11. Device for practicing the process according to any one of claims 7 to 10, characterized in that it comprises finishing means, such as a cutting station (20), a station (30) for
5 smoothing the transverse cut surfaces, a station (32) for smoothing the peripheral surfaces, by rolling, a station (34) for chamfering the stoppers and if desired a surface treatment station.

10 12. Device for practicing the process according to claim 11, characterized in that it comprises a heating station for the surfaces of the stopper so as to obtain flat and smooth surfaces.